

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A sprinkler₁ comprising:

a housing fitted with an inlet port connectable to a water supply line and extending into an inlet chamber;

a hollow stem member with an inlet end thereof being in flow communication with said inlet chamber and an outlet end thereof being in flow communication with an irrigation head; and

a diaphragm seal sealingly fixed at peripheral boundaries thereof to the housing and sealingly articulated to the stem member and supporting the stem member in an essentially upright position,

said diaphragm being deformable between a first position in which the irrigation head is retracted within the housing and a second position in which the irrigation head projects from the housing, the stem member being radially supported to enable only sliding displacement in an axial direction from the inlet chamber towards the irrigation head without any tilt or rotation,

wherein the diaphragm is fully contained within the housing in both the first and second positions.

2. (Previously presented) The sprinkler according to claim 1, wherein the stem member and the irrigation head are axially displaceable within the housing, respective to deformation of the diaphragm seal.
3. (Previously presented) The sprinkler according to claim 1, wherein the diaphragm seal is a beveled annular disc made of an elastic material.
4. (Previously presented) The sprinkler according to claim 1, wherein the housing comprises a shielding portion accommodating at least a portion of the stem member, and the irrigation head.
5. (Previously presented) The sprinkler according to claim 4, further comprising a cover member articulated to one of the stem member and the irrigation head, whereby the shielding portion is closable by said cover member in the first position.
6. (Previously presented) The sprinkler according to claim 4, wherein the shielding portion is formed with one or more drain ports.
7. (Previously presented) The sprinkler according to claim 6, wherein the one or more drain ports are sealed in the first position.

8. (Previously presented) The sprinkler according to claim 7, wherein in the first position a portion of the stem or of an articulated bridge portion displaces into sealing engagement with the one or more drain ports.
9. (Previously presented) The sprinkler according to claim 1, being a rotary sprinkler fitted with a reactionary rotatable sprinkler head.
10. (Previously presented) The sprinkler according to claim 9, wherein the sprinkler head is formed with an axial boss rotatably received within a corresponding bushing receptacle formed at a top of a bridge member articulated to the stem member.
11. (Withdrawn) A sprinkler according to claim 9, wherein a bridge member articulated to the stem member is formed with an axial boss rotatably received within a corresponding bushing receptacle formed in the sprinkler head.
12. (Withdrawn) A sprinkler according to claim 9, wherein the stem member is fitted at its outlet end with a swivel member supporting the rotatable sprinkler head.
13. (Withdrawn) A sprinkler according to claim 12, wherein the swivel member is articulated over the outlet end of the stem member by a snap-type engagement.
14. (Withdrawn) A sprinkler according to claim 1, wherein the irrigation head is bridgeless.

15. (Withdrawn) A sprinkler according to claim 14, wherein the irrigation head is fitted over a swivel freely rotatable over the outlet end of the stem member.
16. (Withdrawn) A sprinkler according to claim 15, wherein the irrigation head is attached to the swivel by a snap-type engagement.
17. (Withdrawn) A sprinkler according to claim 16, wherein the swivel is retained over the stem member by a snap-type engagement and where the irrigation head is snappingly mounted over the swivel to prevent spontaneous detachment thereof.
18. (Previously presented) The sprinkler according to claim 1, wherein the inlet port is fitted with a filter.
19. (Previously presented) The sprinkler according to claim 1, wherein the inlet chamber is fitted with a flow control assembly.
20. (Previously presented) The sprinkler according to claim 19, wherein the flow control assembly comprises a flexible membrane retained within the inlet chamber which, responsive to pressure differential thereover, is deformable to constrict the cross section area of a liquid flow path into the inlet end of the stem member.

- 21.** (Previously presented) The sprinkler according to claim 19, wherein the flow control assembly is axially displaceable along with the stem member.
- 22.** (Previously presented) The sprinkler according to claim 20, wherein in the first position the flexible membrane bears against the inlet port, thus serving as a leak preventing device, ensuring the inlet port is sealed until water pressure at the inlet port reaches a minimal nominal pressure.
- 23.** (Previously presented) The sprinkler according to claim 1, wherein the sprinkler is fitted with a differential pressure control assembly comprising a differential pressure membrane received within the inlet chamber and supported adjacent the inlet end of the stem member, wherein said membrane deforms responsive to pressure differential between an inlet face thereof and an outlet face thereof to thereby vary a through-flow path into said inlet end of the stem.
- 24.** (Previously presented) The sprinkler according to claim 1, wherein the diaphragm seal divides the housing into a pressurized zone on its one side facing the inlet port, and an essentially atmospheric pressure zone on its other side.
- 25.** (Previously presented) The sprinkler according to claim 1, wherein the housing is suitable for suspending in an inverted position with the inlet port up and the irrigation head down.

26. (Previously presented) The sprinkler according to claim 1, wherein the diaphragm seal is biased into its first position.
27. (Previously presented) The sprinkler according to claim 1, wherein the diaphragm seal is biased by a coiled spring bearing at a first end against a portion of the housing and at a second end against a portion of the stem member.
28. (Previously presented) The sprinkler according to claim 1, wherein in its second position the diaphragm seal bears against a corresponding supporting surface of the housing.
29. (Previously presented) The sprinkler according to claim 1, wherein the diaphragm seal is sealingly retained over an annular groove of the stem member.
30. (Previously presented) The sprinkler according to claim 1, wherein the diaphragm seal is articulated to the stem member eliminating radial and axial tolerance.
31. (Previously presented) The sprinkler according to claim 1, wherein the stem member has an inlet portion thereof extending into the inlet chamber for supporting a flexible diaphragm which responsive to pressure differential is deformable to constrict a cross section area of a liquid flow path into the inlet end of the stem member.

32. (Previously presented) The sprinkler according to claim 1, wherein the diaphragm seal is substantially un-tensed in either of its two respective positions.

33. (Previously presented) The sprinkler according to claim 1, wherein the diaphragm seal is beveled.

34. (Previously presented) The sprinkler according to claim 33, wherein the beveled diaphragm seal toggles into its respective first and second positions.

35. (Previously presented) The sprinkler according to claim 33, wherein the beveled diaphragm seal comprises an outer peripheral portion for clamp engagement to the housing, an inner peripheral portion for annularly arresting the stem member, and a beveled portion intermediate said peripheral portions.

36. (Withdrawn) A sprinkler according to claim 1, wherein the diaphragm seal has a ziggurat-like shape.

37. (Withdrawn) A sprinkler according to claim 36, wherein the diaphragm seal comprises alternating first and second portions, said first portions being substantially vertical and said second portions being inclined.

38. (Withdrawn) A sprinkler according to claim 37, wherein said first portions remain substantially vertical at in the first and second positions of the sprinkler.
39. (Withdrawn) A sprinkler according to claim 37, wherein at the second position at least said first and said second portions bear against corresponding support portions of the housing.
40. (Withdrawn) A sprinkler according to claim 1, wherein the diaphragm seal has a bellows-like shape.
41. (Withdrawn) A sprinkler according to claim 1, wherein the diaphragm seal is an elastic member pre-tensed and biased into its first position.
42. (Previously presented) The sprinkler according to claim 1, wherein axial displacement of the stem member is restricted by a shoulder of the stem member engageable with a corresponding bearing surface of the housing.
43. (Previously presented) The sprinkler according to claim 1, wherein the housing further comprises an attachment for articulation to a support.
44. (Withdrawn) A sprinkler according to claim 1, wherein the outlet end of the stem member is fittable with replaceable nozzles, each having a different nominal flow rate.

45. (Previously presented) The sprinkler according to claim 1, wherein the stem member is fitted, adjacent the outlet end thereof, with inwardly projecting radial flow straightening fins.

46. (Previously presented) The sprinkler according to claim 1, wherein the stem member is supported within the housing in a fashion allowing only axial displacement thereof.

47. (Canceled)

48. (Previously presented) The sprinkler according to claim 1, comprising a cover member serving for two or more functions, the functions comprising closing a shielding portion of the housing, serving as a bridge for supporting the irrigation head at an end thereof remote from an outlet nozzle, receiving the outlet nozzle, rotatably supporting the irrigation head, and closing draining ports of the housing in the first position.

49. (Withdrawn) A sprinkler according to claim 1, comprising a cover member supporting the irrigation head and fitted for closing the housing at the first position.

50. (Withdrawn) A sprinkler according to claim 1, comprising a cover member fitted with the irrigation head being in flow communication with the outlet end of the stem member.

51. (Withdrawn) A sprinkler according to claim 1, comprising a bridge member integrally fitted with an outlet nozzle being in flow communication with the outlet end of the stem member.

52. (Previously presented) The sprinkler according to claim 1, wherein the irrigation head substantially retains its axial position with respect to the stem member, in the two respective positions.

53. (Previously presented) The sprinkler according to claim 1, fitted for an upright or an inverted position.

54. (Previously presented) The sprinkler according to claim 52, wherein a hook is provided for suspension of the sprinkler in an upright position or inverted position.

55. (Currently amended) A sprinkler₁ comprising:
a housing fitted with an inlet port extending into an inlet chamber and comprising[[:]]

a beveled diaphragm seal having a first face thereof exposed to pressure within the inlet chamber and a second face exposed to atmospheric pressure; and

a stem member articulated to said beveled diaphragm seal and having an inlet end thereof extending into the inlet chamber and having an outlet end articulated to an irrigation head,

wherein the diaphragm seal is normally retained in a first toggle position where the sprinkler head is concealed within the housing, ~~and~~

wherein water pressure within the inlet chamber deforms the beveled diaphragm seal into a second toggle position where the sprinkler head axially displaces and projects from the housing, the stem member being radially supported to enable only sliding displacement in an axial direction from the inlet chamber towards the irrigation head without tilt or rotation, and

wherein the diaphragm is fully contained within the housing in both the first and second toggle positions.